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APPLICATION NO.	FILING DATE	FIRST NAMED INVENTOR	ATTORNEY DOCKET NO.	CONFIRMATION NO.
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10/587,031

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Walter Spaeth

SPAETH1

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EXAMINER

SULLIVAN, DEBRA M

ART UNIT

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3725

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PAPER

Please find below and/or attached an Office communication concerning this application or proceeding.

The time period for reply, if any, is set in the attached communication.

Office Action Summary	Application No. 10/587,031	Applicant(s) SPAETH, WALTER	
	Examiner DEBRA M. SULLIVAN	Art Unit 3725	

-- The MAILING DATE of this communication appears on the cover sheet with the correspondence address --

Period for Reply

A SHORTENED STATUTORY PERIOD FOR REPLY IS SET TO EXPIRE 3 MONTH(S) OR THIRTY (30) DAYS, WHICHEVER IS LONGER, FROM THE MAILING DATE OF THIS COMMUNICATION.

- Extensions of time may be available under the provisions of 37 CFR 1.136(a). In no event, however, may a reply be timely filed after SIX (6) MONTHS from the mailing date of this communication.
- If NO period for reply is specified above, the maximum statutory period will apply and will expire SIX (6) MONTHS from the mailing date of this communication.
- Failure to reply within the set or extended period for reply will, by statute, cause the application to become ABANDONED (35 U.S.C. § 133). Any reply received by the Office later than three months after the mailing date of this communication, even if timely filed, may reduce any earned patent term adjustment. See 37 CFR 1.704(b).

Status

- 1) ☒ Responsive to communication(s) filed on 08 September 2008.
- 2a) ☐ This action is **FINAL**. 2b) ☒ This action is non-final.
- 3) ☐ Since this application is in condition for allowance except for formal matters, prosecution as to the merits is closed in accordance with the practice under *Ex parte Quayle*, 1935 C.D. 11, 453 O.G. 213.

Disposition of Claims

- 4) ☒ Claim(s) 1-21 is/are pending in the application.
- 4a) Of the above claim(s) _____ is/are withdrawn from consideration.
- 5) ☐ Claim(s) _____ is/are allowed.
- 6) ☒ Claim(s) 1-21 is/are rejected.
- 7) ☐ Claim(s) _____ is/are objected to.
- 8) ☐ Claim(s) _____ are subject to restriction and/or election requirement.

Application Papers

- 9) ☐ The specification is objected to by the Examiner.
- 10) ☒ The drawing(s) filed on 24 July 2006 is/are: a) ☒ accepted or b) ☐ objected to by the Examiner.
Applicant may not request that any objection to the drawing(s) be held in abeyance. See 37 CFR 1.85(a).
Replacement drawing sheet(s) including the correction is required if the drawing(s) is objected to. See 37 CFR 1.121(d).
- 11) ☐ The oath or declaration is objected to by the Examiner. Note the attached Office Action or form PTO-152.

Priority under 35 U.S.C. § 119

- 12) ☒ Acknowledgment is made of a claim for foreign priority under 35 U.S.C. § 119(a)-(d) or (f).
- a) ☒ All b) ☐ Some * c) ☐ None of:
1. ☐ Certified copies of the priority documents have been received.
 2. ☐ Certified copies of the priority documents have been received in Application No. _____.
 3. ☒ Copies of the certified copies of the priority documents have been received in this National Stage application from the International Bureau (PCT Rule 17.2(a)).

* See the attached detailed Office action for a list of the certified copies not received.

Attachment(s)

- | | |
|--|---|
| 1) <input checked="" type="checkbox"/> Notice of References Cited (PTO-892) | 4) <input type="checkbox"/> Interview Summary (PTO-413) |
| 2) <input type="checkbox"/> Notice of Draftsperson's Patent Drawing Review (PTO-948) | Paper No(s)/Mail Date. _____ |
| 3) <input checked="" type="checkbox"/> Information Disclosure Statement(s) (PTO/SB/08) | 5) <input type="checkbox"/> Notice of Informal Patent Application |
| Paper No(s)/Mail Date <u>12172007</u> . | 6) <input type="checkbox"/> Other: _____ |

DETAILED ACTION

Claim Rejections - 35 USC § 112

The following is a quotation of the second paragraph of 35 U.S.C. 112:

The specification shall conclude with one or more claims particularly pointing out and distinctly claiming the subject matter which the applicant regards as his invention.

Claims 1-21 are rejected under 35 U.S.C. 112, second paragraph, as being indefinite for failing to particularly point out and distinctly claim the subject matter which applicant regards as the invention. The claims are generally narrative and indefinite, failing to conform with current U.S. practice. They appear to be a literal translation into English from a foreign document and are replete with grammatical and idiomatic errors. Some examples found in the claims are: “namely counter to the support action of a support roller arranged on the outside of the bend at the incoming side” found in claim 1, “over the associated side walls into the front wall at the inside of the bend” in claim 3, entire claim 15 and “a gravity line remains intact unshifted, that as a result of the upsetting forces” in claim 21.

The limitation “the opposed central and forming rollers” in claim 1 renders the claim indefinite because applicant fails to claim that the central roller and the forming roller are opposed to one another. Applicant states that the central roller is located on the inside of the section being bent and the forming roller is located on the outside of the bend; however the rollers do not have to be opposing one another to meet the claimed positions.

The limitations of claim 7 fails to further define the claimed apparatus since the limitations appear to be directed to a method.

With regards to claim 8, the limitation “is moved plane-parallel against the outside of the bend” renders the claim indefinite because it is unclear the direction applicant is claiming. In

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addition, the limitation "the roller (central roller)" renders the claim indefinite because it is unclear if applicant is claiming the central roller as the roller or if applicant is referring to another roller.

With regards to claim 9, the limitation "also designed oscillating" does not positively claim the rollers to be oscillating rollers.

The limitation "the gravity bending" in claim 10 renders the claim indefinite because it is unclear what gravity bending entails. It is further noted that the limitations of the claim fail to further define the apparatus since no structural limitations are present.

The limitation "is plane-parallel" in claim 12 renders the claim indefinite because it is unclear if applicant is claiming the roller to be parallel to a plane or to the structural section.

The subject matter of claims 18-21 are couched in a narrative format which does not lend itself to a clear understanding of the essential steps of the method. Positively setting forth the method as a series of steps with the essential features of each step being distinctly claimed would overcome the indefiniteness with regard to the inferential claimed provision.

Claim 1 recites the limitations "the inside" in line 2, "the structural section" in line 3, "the outside", "the bend" and "the discharge end" in line 3, "the incoming side" in line 6, "the bending plane" in line 7, and "the upper and lower side wall" in line 9 . There is insufficient antecedent basis for these limitations in the claim.

Claim 3 recites the limitations "the material flows" and "the front wall" in line 2, and "the oscillating forming rollers" in line 3. There is insufficient antecedent basis for these limitations in the claim.

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Claim 4 recites the limitations "the roll-out bending" and "the upper and lower oscillating forming rollers" in line 2, and "the plane-parallelism" in line 4. There is insufficient antecedent basis for these limitations in the claim.

Claim 6 recites the limitation "the material" in line 3. There is insufficient antecedent basis for this limitation in the claim.

Claim 7 recites the limitation "the bending line" in line 2. There is insufficient antecedent basis for this limitation in the claim.

Claim 10 recites the limitation "the gravity bending" in line 2, and "the bending line", "the gravity line" and "the center" in line 3. There is insufficient antecedent basis for these limitations in the claim.

Claim 11 recites the limitation "the oscillating forming rollers" in line 2. There is insufficient antecedent basis for this limitation in the claim.

Claim 12 recites the limitation "the region" and "the bending line" in line 2, "the contour" in line 3, and "the structural section shape" and "the original unformed structural section" in line 5. There is insufficient antecedent basis for this limitation in the claim.

Claim 13 recites the limitation "the roller upset bending" and "the bending line" in line 2, and "the material thickenings" in line 3. There is insufficient antecedent basis for this limitation in the claim.

Claim 14 recites the limitation "the speed" in line 2 and 3, and "the bending gap" in line 4. There is insufficient antecedent basis for this limitation in the claim.

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Claim 15 recites the limitations "the inside and outside" in line 2, "the bend brake shoes" and "the resistance" in line 3, and "the neutral axis" in line 4. There is insufficient antecedent basis for these limitations in the claim.

Claim 16 recites the limitation "the oscillating rollers" in line 2. There is insufficient antecedent basis for this limitation in the claim.

Claim 18 recites the limitations "the material flows" in line 2, and "the front wall" in line 3. There is insufficient antecedent basis for these limitations in the claim.

Claims 19 and 20 recite the limitations "the flow forming and bending" and "the neutral axis" in line 2. There is insufficient antecedent basis for these limitations in the claims.

Claim 21 recites the limitation "the flow forming and bending" in line 2, "the upsetting forces" and "the material" in line 3, "the bending center line" in line 4, and "the same volume" in line 5. There is insufficient antecedent basis for these limitations in the claim.

It is noted that while the Examiner has pointed out a majority of the 112 second rejections, the claims should be revised carefully in order to comply with 35 U.S.C. 112, second paragraph.

Claim Rejections - 35 USC § 103

The following is a quotation of 35 U.S.C. 103(a) which forms the basis for all obviousness rejections set forth in this Office action:

(a) A patent may not be obtained though the invention is not identically disclosed or described as set forth in section 102 of this title, if the differences between the subject matter sought to be patented and the prior art are such that the subject matter as a whole would have been obvious at the time the invention was made to a person having ordinary skill in the art to which said subject matter pertains. Patentability shall not be negated by the manner in which the invention was made.

Claims 1 rejected, as best understood, under 35 U.S.C. 103(a) as being unpatentable over Spath (US 6,189,354) in view of Schule (US 2004/0244453). In reference to claim 1, Spath

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discloses a bending apparatus for bending closed sections having a central roller (13) coming to rest against an inside of the closed section being bent, a forming roller (28) coming to rest against the outside of the bend, and a bending roller (27) arranged at the discharge end of the structural section that acts upon the outside of the bend, namely counter to the support action of a support roller (29) arranged on the outside of the bend at the incoming side. Spath discloses the invention substantially as claimed except for wherein the apparatus further includes additional forming rollers. However, Schule teaches of providing additional forming rollers (67) in a plane perpendicular to a bending plane which act upon the upper and lower side wall of a structural section in order to support and guide the side walls during the bending operation [see 0064]. Therefore it would have been obvious to one having ordinary skill in the art at the time the invention was made to modify apparatus of Spath to include additional forming rollers at the upper and lower side walls in order to provide additional support to the side walls during the bending operation.

In reference to claim 2, Schule further teaches the forming rollers acting upon the side walls are oscillating forming rollers.

In reference to claim 3, the combination of Spath and Schule further discloses the material flows generated in the front wall at the outside of the bend are deflected by means of the oscillating forming rollers acting upon the side wall, over the associated side walls into the front wall at the inside of the bend. It is noted that a recitation of the intended use of the claimed invention must result in a structural difference between the claimed invention and the prior art in order to patentably distinguish the claimed invention from the prior art. If the prior art structure is capable of performing the intended use, then it meets the claim. See *In re Casey*, 370 F.2d

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576, 152 USPQ 235 (CCPA 1967) and *In re Otto*, 312 F.2d 937, 939, 136 USPQ 458, 459 (CCPA 1963).

In reference to claim 4, the combination further discloses, in the case of toll-out bending, the upper and lower oscillating forming rollers are positioned conically inclined toward each other in their axial position against the plane-parallelism of the structural section to be bent.

In reference to claim 5, the combination further discloses a greater roll-out depth is attached at the two upper and lower side walls on the outside of the bend than, by comparison, on the inside of the bend.

In reference to claim 6, the oscillating forming rollers have a relative penetration depth into the material at the upper and lower side wall on the outside of the bend, whereas the penetration depth tapers off toward 0 toward the inside of the bend.

In reference to claim 7, the bending line is moved to the inside of the bend and a grain flow is induced from the outside of the bend toward the inside of the bend.

In reference to claim 8, Spath further discloses the forming roller on the outside of the bend is moved plane-parallel against the outside of the bend of the structural section, and that the roller (central roller) resting against the inside of the bend is moved plane-parallel against the inside of the bend.

In reference to claim 9, the forming and central rollers resting against the inside and outside of the bend are also designed oscillating and positioned inclined toward each other.

In reference to claim 10, in the case of gravity bending of a symmetrical structural section, the bending line relation in the gravity line, approximately in the center of the structural section to be bent.

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In reference to claim 11, the upper and lower oscillating forming rollers have at least partly conical roller surfaces.

In reference to claim 12, in the region toward the central center line from the bending line outward, the contour has an incline and that from the bending line toward the inside of the bend the contour of the upper and lower oscillating forming roller is plane-parallel to the structural section shape of the original unformed structural section.

In reference to claim 13, in the case of roller upset bending, the bending line is moved toward the outside of the bend and the material thickenings of the side walls are deflected into the inside wall of the bend.

In reference to claim 14, the speed of the roller resting against the respective outside and inside of the structural section is less than the speed of the structural section through the bending gap.

In reference to claim 16, in addition to the oscillating rollers, the central roller and the forming roller are designed to be swivelable.

In reference to claim 17, the central roller and the opposed forming roller can be conically inclined as well.

In reference to claim 18, the combination of Spath and Schule discloses a method wherein the material flows generated in the front wall at the outside of the bend are deflected over the associated side walls into the front walls at the inside of the bend.

In reference to claim 19, in the case of flow forming and bending, a grain flow is induced in the neutral axis of the structural section, extending from the outside of the bend of the structural section toward the inside of the bend.

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In reference to claim 20, in the case of flow forming and bending, a grain flow is induced in the neutral axis of a structural section, extending from the inside of the bend of the structural section toward the outside of the bend.

In reference to claim 21, in the case of flow forming and bending, a gravity line remains intact unshifted that as a result of the upsetting forces an increase of the material takes place starting from the bending center line of the structural section toward the inside of the bend, and that a material decrease in the same volume takes place via a roll-out process on the outside of the bend, with the result that, due to the roll-out effects, upsetting and stretching forces are eliminated by the roll-out action.

Conclusion

Any inquiry concerning this communication or earlier communications from the examiner should be directed to Debra Sullivan whose telephone number is (571) 272-1904. The examiner can normally be reached Monday - Friday 8am - 4pm.

If attempts to reach the examiner by telephone are unsuccessful, the examiner's supervisor, Dana Ross can be reached at (571) 272-4480. The fax phone number for the organization where this application or proceeding is assigned is 571-273-8300.

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Information regarding the status of an application may be obtained from the Patent Application Information Retrieval (PAIR) system. Status information for published applications may be obtained from either Private PAIR or Public PAIR. Status information for unpublished applications is available through Private PAIR only. For more information about the PAIR system, see <http://pair-direct.uspto.gov>. Should you have questions on access to the Private PAIR system, contact the Electronic Business Center (EBC) at 866-217-9197 (toll-free).

/Debra M Sullivan/
Examiner, Art Unit 3725